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WORK OF THE OBSERVER

ISSUED BY THE
DIVISION OF MILITARY AERONAUTICS
U. S. ARMY

LECTURE BY
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WASHINGTON
GOVERNMENT PRINTING OFFICE
1918

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WORK OF THE OBSERVER

When an observer arrives in a new sector, he must make an ascension in order to study the terrain. In this study he must get well fixed in his mind the precise terminations of the first-line trenches. He must follow out the line of "no man's land" running between the first line, so that he will never be in doubt as to whether a point is within our lines or in the enemy lines. Sometimes this is a pretty difficult operation, particularly in an active sector where the ground is very much cut up and where unused trenches even run across "no man's land."

When you are familiar with the trenches of both sides, go farther behind the enemy lines and pick out the most important points. In other words, get as familiar as possible with the sector in the time at your disposal.

Either before or after this first ascension in the new sector, unless it has already been done by the company which was there before you, make a map of the dead ground, preferably for three different heights—for example, 800, 1,000, and 1,200 meters. At least —— copies of this map should be made, one of which is kept in the company and the other sent to the headquarters of the artillery. It is advisable to make at least one of these for each battery of artillery in your sector.

Now I will take up the service in the basket.

In the first place, it is very important that you have all the necessary materials to work with in the basket. It is a good thing to have a list like the following posted in the basket:

1/20000 map on a roller board.

1/10000 map on a roller board.

Carrier for the documents of the basket. (I will take up later the documents in this carrier.)

Three pairs of field glasses (6 or 8 power, 12 or 16 power, and 8 power, with the mil scale).

Chamois for cleaning the glasses.

Duodecimeter rule.

Two hard pencils with protected points.

Eraser.

Pad of paper.
Celluloid scale for 1/20000 map and one for 1/10000 map.
Hand anemometer.
Altimeter (have it set).
Compass.
Thermometer.
Table of signals, in case the telephone gets out of order.
Knife.
Change of microphone capsule for the telephone.
Straightedge.
Weighted envelopes.

It is also a good thing to take up a reel of wire four or five hundred meters long. If the telephone wire in the cable should be short-circuited, this wire would alleviate the necessity of returning to the balloon bed and hauling the balloon down, which would result in a big loss of valuable time.

Now, a few words about the documents in the basket.

I have mentioned the two maps at the scale of 1/20000 and 1/10000. On these should be marked the most important alignments running from the balloon position. The woods and hedges should be colored green so that they can easily be picked out. These maps should be corrected and added to as new information comes in. As soon as the bulletins and photographs arrive the corrections should be made. In the document carrier the following documents are placed:

The photographic reduction to 1/50000 of the sector and the two neighboring sectors.

Map of 1/5000. This map is usually cut into kilometer squares and mounted in a book or on cards.

Map of 1/50000 mounted on cloth, with a front of about 25 kilometers. On this map the important railroads, roads, enemy balloon emplacements, camps, supply parks, ammunition dumps, etc., should be marked and colored.

Artillery map of enemy batteries and their usual zones of action.

Photographs in a pocket or file.

Map of 1/20000 on cloth, with the territory covered by each photograph carefully marked and numbered according to the photograph.

Program of the day's work in a small notebook.

Map of 1/200000, which would be useful if the balloon should break away.

On the ground duplicates are kept of all the documents in the basket. In addition to these there are also the following:

A guide to all telephone connections, both on the system of command and the system of fire control. This would correspond to a telephone directory in a civil system.

A repertoire of enemy batteries, which is kept up to date. (List.)

A plan of the telephone systems of the Army, of command, of fire control, and of the company.

A 1/20000 map showing the allied battery emplacements and the zones of action of the various groups.

A list of batteries with the names of the battery commanders, for purposes of liaison.

Map of the dead ground for different altitudes.

Panorama of the sector.

Company diary.

Table of maximum ranges of allied and German guns.

A complete record of all information sent down by the observer and of all observations of fire made from the basket.

It is the duty of the observers to see that all these documents are kept in order and up to date.

To get back to the work of the observer in the basket:

There are three different missions which an observer can be called upon to perform.

1. The mission of general surveillance over the sector.

2. The mission of giving information to the commanders and liaison with the infantry.

3. The mission of regulating fire.

1. GENERAL SURVEILLANCE.

This is generally the mission of the army corps balloon. It consists in reporting all manifestations of the enemy; batteries seen in action; movements of trains and all movements of troops and supply trains on roads; activity of the enemy air service—balloons ascending or descending, and activity around aviation fields, if the visibility is sufficiently good; any new works or organizations of the enemy. After some time in a sector you will become so familiar with it, especially if it is calm, that you will at once notice any new works or fortifications.

In reporting batteries in action try to tell the caliber of the battery. Watch the flash carefully for its characteristics and try to find the bursts. From these you can very often tell

the caliber. When you can find the burst watch carefully to determine the time of flight. In this way you can usually tell whether it is a real battery or a dummy battery, as well as being greatly aided in determining the type of gun and the caliber.

Try to notice whether there are any changes in the activity of either the enemy artillery or infantry. Get acquainted with the regular trains on the railroads and with the regular convoys on the roads, so that you can report any changes in these. It is very important to know whether there is more or less activity than usual on the roads and railroads.

A record should be kept in the chart room of each battery reported in action during the day by the observer in the basket, according to the following form:

Battery.	Coordinates.	Region.	Number of pieces.	Caliber.	Objective.	Time.
.....	.....	.....	.....	.....	.....	.....

This record is checked up with the rèpertoire of batteries in the chart room and any changes carefully noted.

As I said, watch all transports of troops and supplies ou roads and railroads. Troops are hard to see, because they usually travel on protected ground.

In reporting convoys, give, whenever possible, the number of vehicles, the road followed, their direction, and the time they pass different points. If you call for fire on a convoy, judge it so that there will be no escape. Catch the convoy at a point where it will be passing over a road with no woods on the side in which it can hide or with steep banks on both sides.

Notice, as I said, the daily regularity of all movements, whether of troops, supplies, or railroad trains. If you see an excellent opportunity to inflict damage, call for fire, and direct it so that the maximum damage will be inflicted.

If you see new works, or works which you think may have changed, study them with reference to photographs. Report them to the air service information officer, so that new photographs can be taken of them immediately.

In reporting the activity of enemy balloons remember that they are referred to by the name of the nearest town. Try to find the balloon position, so that you will recognize it if it is new in the sector.

2. COMMAND AND LIAISON.

The balloon which performs this mission is the divisional balloon. In case of an attack it is attached to the infantry. The balloon is connected by telephone directly with the infantry divisional headquarters. The observer acts as the general's field glasses, reporting everything that happens in connection with the attack.

Often the divisional balloon during an attack has two observers in separate baskets. One of these works in liaison with the infantry, and the other is for the divisional artillery—the Field Artillery. He watches the barrages and keeps the artillery commanders informed.

Often the divisional balloon in cases of attack is the only means of communication between the infantry in its new positions and the commanders in the rear. When telephonic communication has not been established by the time night falls, the balloon may be called upon to stay up and receive the signals from the infantry. In this case a lamp is hung from the basket for a short time to give the infantry signalers the balloon position in order that they can point their projectors.

3. OBSERVATION OF FIRE.

Before observing fire for a battery, the observer should go in liaison with the battery and come to a complete understanding.

Be sure that you have the following data:

1. The exact objective. Get the coordinates and look at the map with the battery commander so that there will be no possibility of a mistake.

3. The nature of the fire. Get the approximate time of flight, and the kind of fuse used. Of course, you will know the caliber of the battery for which you are going to observe.

3. The number of pieces which will fire, and whether they will fire by salvo or one piece at a time.

If the firing is to be done by salvo, the observer should ask that there be a five-second interval between shots so that he will not get the shots confused. It is also a good thing to ask him to have the order in which his pieces fire against the wind. If this is done, the smoke from one shot will not interfere with the observation of the next.

Before you go up to make an observation of fire study the maps and photographs of the objective very carefully. Draw the necessary lines on these maps and photographs.

When you have finished your study of the terrain from the basket and are ready to begin the regulation, announce to the battery that you are ready to observe. The following conversation takes place:

Battery: Ready to fire.

Observer: Ready to observe.

Battery: On the way.

When you give the corrections, do not carry on any unnecessary conversation over the telephone. Give as briefly and as clearly as possible the corrections, mentioning the correction in deflection first. Give the amount of the error before the sense of the error.

It is not usually necessary or advisable to give the amount of an error in range, unless it is exceptionally large. Report the shots as —— meters right (or left), and short (or over).

When you are looking for a shot and do not see it, report "lost." When you do not see a shot because you were not ready, report "I was not in a position to observe." This is very important, because in the first case the battery commander suspects that there was an error made in the aiming of the piece, and in the second case there is a good reason why the shot was not seen, and the aiming might have been correct.

Give the report "target" only when evident demolition of the objective is seen.

There is plenty of work for the observer to do when he is not in the air. There are usually liaison visits to make with the artillery. Visits should be made both before and after working with a unit, whether artillery or infantry. Liaison visits should also be made to the air service.

There are three kinds of regulation of fire:

1. From terrestrial observatories.
2. From balloons.
3. From aeroplanes.

The first way is the easiest, the least dangerous, and the least expensive, while the aeroplane is the most dangerous and the most expensive. For this reason the balloon should not be called upon to make regulations which could be made from the ground, and the aviation should not be called upon to make regulations which a balloon could make. Efficient liaison between the balloons, the artillery, and the aviation settles these

questions. The dead-ground maps should be studied carefully and the work divided up.

Besides the liaison work there is always work in the company to be done by the observers. Each observer should read carefully every information bulletin that comes in and see that the maps and documents are corrected accordingly. The photographs, which arrive in large quantities during good weather, should be studied by the observers and substituted for those in use in the basket when there are any changes.

When the company commander is absent or busy with other work, one of the observers on the ground should take his place at the commanding post of the company.

In short, the days which an observer spends on the ground are not rest days. He can always find something which ought to be done by him.

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